USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY

North Carolina Standard Course of Study – Science: Biology

Lesson	Competency Goal	Description
3	**1.01**	Identify biological questions and problems that can be answered through scientific investigations.
1, 2, 3	**1.02**	Design and conduct scientific investigations to answer biological questions. Create testable hypotheses. Identify variables. Use a control or comparison group when appropriate. Select and use appropriate measurement tools. Collect and record data. Organize data into charts and graphs. Analyze and interpret data. Communicate findings.
2, 3	**1.03**	Formulate and revise scientific explanations and models of biological phenomena using logic and evidence to: explain observations, make inferences and predictions, and explain the relationship between evidence and explanation.
1, 2, 3	**1.04**	Apply safety procedures in the laboratory and in field studies. Recognize and avoid potential hazards. Safely manipulate materials and equipment needed for scientific investigations.
2, 3	**1.05**	Analyze reports of scientific investigations from an informed, scientifically literate viewpoint including considerations of: appropriate sample, adequacy of experimental controls, replication of findings, and alternative interpretations of the data.
3	**2.03**	Investigate and analyze the cell as a living system including: maintenance of homeostasis, movement of materials into and out of cells, and energy use and release in biochemical reactions.

North Carolina Standard Course of Study – Mathematics: Introductory Mathematics & Algebra I

Lesson	Competency Goal	Description
1	**1.01**	Write equivalent forms of algebraic expressions to solve problems: apply the laws of exponents. (Alg)
1, 2	**1.02**	Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil. (Intro)
1, 2	**3.01**	Collect, organize, analyze, and display data (including scatterplots) to solve problems. (Intro)

Source: http://www.ncpublicschools.org/curriculum/ncStandard Course of Study
All alignments are based on the curriculum standards as of 08/06. B. Houtz

North Carolina Standard Course of Study – English Language Arts: English I & II		
Lesson	**Competency Goal**	**Description**
All lessons	**2.01**	Demonstrate the ability to read, listen to and view a variety of increasingly complex print and non-print informational texts appropriate to grade level and course literary focus, by: selecting, monitoring, and modifying as necessary reading strategies appropriate to readers' purpose, identifying and analyzing text components (such as organizational structures, story elements, organizational features) and evaluating their impact on the text, providing textual evidence to support understanding of and reader's response to text, demonstrating comprehension of main idea and supporting details, summarizing key events and/or points from text, making inferences, predicting, and drawing conclusions based on text, identifying and analyzing personal, social, historical or cultural influences, contexts, or biases, making connections between works, self and related topics, analyzing and evaluating the effects of author's craft and style, analyzing and evaluating the connections or relationships between and among ideas, concepts, characters and/or experiences, and identifying and analyzing elements of expressive environment found in text in light of purpose, audience, and context. (Eng I & II)
3	**2.02**	Explain commonly used terms and concepts by: clearly stating the subject to be defined, classifying the terms and identifying distinguishing characteristics, organizing ideas and details effectively, using description, comparison, figurative language, and other appropriate strategies purposefully to elaborate ideas, and demonstrating a clear sense of audience and purpose. (Eng I)
3	**2.04**	Form and refine a question for investigation, using a topic of personal choice, and answer that question by: deciding upon and using appropriate methods such as interviews with experts, observations, finding print and non-print sources, and using interactive technology or media, prioritizing and organizing the information, incorporating effective media and technology to inform or explain, and reporting (in written and/or presentational form) the research in an appropriate form for a specified audience. (Eng I)
3	**3.01**	Examine controversial issues by: sharing and evaluating initial personal response, researching and summarizing printed data, developing a framework in which to discuss the issue (creating a context), compiling personal responses and researched data to organize the argument, or presenting data in such forms as a graphic, an essay, a speech, or a video. (Eng II)
3, 4	**3.02**	Express an informed opinion that: states clearly a personal view, is logical and coherent, and engages

		the reader's interest or curiosity. (Eng I)
3, 4	**3.03**	Support that informed opinion by: providing relevant and convincing reasons, using various types of evidence, such as experience or facts, using appropriate and effective language, reasons, and organizational structure for the audience and purpose, and demonstrating awareness of the possible questions, concerns, or counterarguments of the audience. (Eng I)
North Carolina Standard Course of Study – Healthful Living: High School		
Lesson	**Competency Goal**	**Description**
All lessons	**10.03**	Demonstrate collaboration as a group and individually contribute to the group's success through a variety of noncompetitive duties.